DOE/EA-1295

FINDING OF NO SIGNIFICANT IMPACT

PROPOSED DECONTAMINATION AND DECOMMISSIONING OF

BUILDING 301 HOT CELL FACILITY

AT ARGONNE NATIONAL LABORATORY

U. S. Department Of Energy
Chicago Operations Office

September, 2000

U.S. Department of Energy

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Proposed Decontamination and Decommissioning of
Building 301 Hot Cell Facility
At Argonne National Laboratory
Argonne, Illinois

AGENCY: U.S. Department of Energy

ACTION: Finding of No Significant Impact (FONSI)

SUMMARY: The Department of Energy (DOE) has prepared an Environmental Assessment (EA) DOE/EA-1295, evaluating proposed decontamination and decommissioning (D&D) of Building 301 Hot Cell Facility at Argonne National Laboratory-East (ANL-E), Argonne, Illinois. Building 301 was one of the first permanent buildings constructed at the present Argonne site. Building construction was initiated in 1949 and completed in 1950. The building was designed for use as a "hot laboratory" to support the reactor program. There appears to have been three phases in the use of this building, which can be dated approximately to the 1950's, the 1960's, and the 1990's. The building is currently unoccupied. The D&D work would protect human health and the environment from risks associated with the contaminated surplus Building 301. Building 301 contains residual radioactivity and hazardous materials. Based on the analysis in the EA, DOE has determined that the proposed action does not constitute a major federal action significantly affecting the quality of the human environment within the meaning of the National Environmental Policy Act of 1969 (NEPA). Therefore, the preparation of an Environmental Impact Statement is not required.

DESCRIPTION OF THE PROPOSED ACTION: The proposed action would include activities such as equipment and systems disassembly, size reduction by saws or cut-off wheels, removal of paint and contamination from the surfaces by mechanical means connected to High Efficiency Particulate Air (HEPA)-filtered recovery system, and packaging and disposal of the resultant waste. The decontamination work would be performed indoors and would leave Building 301 in a safe lay-up condition after the completion of D&D. Surveillance and monitoring activities would be conducted to ensure the safe and efficient operations of the building's support facilities.

ALTERNATIVES: Under the No Action Alternative, Building 301 would not be decontaminated, the existing equipment would not be removed, and the building would not be demolished. Building 301 would be maintained in its present condition. Surveillance and monitoring activities would continue to ensure adequate containment of radioactive materials, provide physical safety and security controls and to allow for personnel access. The use of the contaminated space for other activities would be precluded. Surveillance and maintenance personnel would continue to be exposed to radioactivity and the risk of release of material due to accidents or natural hazards would remain.

ENVIRONMENTAL IMPACTS: Impacts of activities associated with D&D of Building 301 were analyzed in the EA. The Finding of No Significant Impact for the proposed action is based on the following factors, which are supported by information and analysis in the EA.

Cultural Resource Impacts: DOE has determined that Building 301 is eligible for listing on the National Register of Historic Places because it is an excellent example of early construction at ANL-E and because of its importance in the development of hot cells. DOE will mitigate for this adverse effect by completing Illinois Historic American Engineering Record documentation for Building 301 in accordance with a memorandum of agreement with the Illinois Historic Preservation Agency and the Advisory Council on Historic Preservation. Two sets of manipulator arms used in the hot cells would be properly stored at ANL-E pending future curation.

Air Quality Impacts: This project would generate very small amounts of particulate air emissions (dust) indoors, which would include a small amount of radioactivity. Air emissions would be controlled by portable HEPA filters.

Transportation Impacts: Approximately 37 truckloads of wastes would leave ANL-E for shipment to disposal sites. No transportation accidents would be expected to occur.

Human Health Impacts: Worker personnel radiation exposures are expected to average less than 100 mrem per worker and the estimated collective worker dose would approximately 0.313 person-rem. Workers engaged in the proposed action would incur an 8.32×10^{-5} collective increased risk for a fatal cancer.

Accidents and Natural Hazards: The risks of accidental injury to workers from the proposed action would be similar to risks from construction projects of comparable size. No fatal accidents and nonfatal occupational injuries or illnesses would be expected to occur based on construction industry statistics.

Waste Management: The proposed action would generate approximately $14m^3$ of conventional waste, $182m^3$ of low-level radioactive waste, $0.6m^3$ of low-level radioactive and hazardous mixed waste, 1.4 m^3 asbestos waste, and $8.7m^3$ of hazardous waste.

All wastes generated by the proposed action (except for wastewater which would be treated on site before release and lead shielding that may be recycled as shielding at other ANL-E projects) would be disposed of at off-property permitted facilities with available capacity.

Noise Impacts: Noise would be produced by D&D equipment during normal working hours for the duration of the project. Workers located in areas where equipment would be used for remediation would use hearing protection. Noise would not be noticed by persons away from the Building 301 area.

Environmental Justice: DOE has analyzed the effects of the proposed action and determined that implementing the action would not have disproportionately high adverse human health or environmental impacts in any area occupied by predominantly low-income or minority populations. There would be minimal, if any, off-site impacts.

Cumulative Impacts: The incremental impact of the proposed action would not be significant if added to all other past, present and reasonably foreseeable future actions at ANL-E. No known off-property activity is adversely affecting human health or the environment on the ANL-E property or in immediately adjacent areas.

DETERMINATION: Based on the analysis in the EA, the DOE has determined that the proposed D&D of Building 301 at Argonne National Laboratory-East does not constitute a major federal action significantly affecting the quality of the human environment within the meaning of the National Environmental Policy Act of 1969. Therefore, an Environmental Impact Statement on the Proposed Action is not required.

PUBLIC AVAILABILITY: Copies of the EA (DOE/EA-1295) are available from:

Robert C. Wunderlich
Acting Argonne Group Manager
9800 South Cass Avenue
Argonne, Illinois 60439
(630) 252-2436

For further information regarding the DOE NEPA process contact:

W. S. White
NEPA Compliance Officer
Chicago Operations Office
9800 South Cass Avenue
Argonne, Illinois 60439
(630) 252-2101

Issued in Argonne, Illinois, this _____ Day of September, 2000

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Robert L. San Martin
Manager